



Yours ref: ITO-100  
-PCT  
Our ref: 550300/ASN

S/N: 10/537,338

Docket No.: ITO-100-PCT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 10/537,338

Confirmation No.: 3453

Applicant: **Yoshihiro YAMAMOTO et al.**

Art Unit: 1655

Filed: June 2, 2005

Examiner: **Petersen, Clark D**

Docket No: ITO-100-PCT

Customer No: 28892

For: **Method of Analyzing Coenzyme Q-10 and Two-Electron Reduction Product Thereof and Analysis System**

**DECLARATION**

My name is Osamu Shirota . I work for Shiseido Company, Ltd. and my title is supervisor of HPLC Application Laboratory . I have knowledge of this art.

A reducing cell (part) of the coulometric detector is not a closed system. The cell itself does not have any reducing or oxidizing nature towards substances. A conductive material forming the cell was connected to an external electric circuit, which supplies the reducing potential. Electrochemical detectors based on the combination of reducing and oxidizing parts existed in other geometries, such as Interdigitated Array (IDA) Electrode, introduced in the late 1980's (see [http://www.chinstruments.com/accessory/pdf/IDA\\_Electrode.pdf](http://www.chinstruments.com/accessory/pdf/IDA_Electrode.pdf)).

Their major drawback is a gradual deterioration in performance (both in reduction and oxidization) as an operation continues, which is inherent to any detector with electrodes made of a solid material. (A mercury electrode, a historical electrode, was superb in this aspect).

On the contrary, the reducing column used in the invention is a completely closed system. It contains platinum oxide, a reducing material, in the order of gram. Since the amount of the CoQ10 passing through it each time is in the order of ten to the minus 9<sup>th</sup>, the amount of the reducing material in the column is practically enough to serve forever. Also, the stoichiometrically tremendously excessive amount of reducing material ensures a complete reduction of CoQ10 molecules supplied into it, while we could see vitamin E that partially escaped the oxidize-reduce process in the coulometric detector in one of the figures in the paper.

I hereby declare upon penalty of perjury that all of the foregoing statements are true and accurate and understand that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon. I also declare that to the best of my knowledge, all statements are true and that all statements made on information and belief are believed to be true.

Signature:



Name: Osamu Shirota

Title: Supervisor, HPLC Application Laboratory

Date: 2<sup>nd</sup> of November 2007